

DEVON RIVER AUTHORITYRIVER TEIGNFISHERIES SURVEY 19721. INTRODUCTION

This, the second fisheries survey of the River Teign was made during July and August 1972.

The aim of the survey was to assess the distribution and relative abundance of salmonid fish.

Current data on anglers' and netsmen's returns are given in the Appendix.

2. METHODS

Twenty-seven sections were surveyed which were accessible and fishable by electro-fishing methods. Each section was chosen to represent a 'reach' of the river.

The sections were grouped as follows:-

North Teign and tributaries	4
South Teign	2
River Teign - Leigh Bridge to Bovey confluence	11
River Bovey and tributaries	8
Stover Brook - Teign tributary below Bovey confluence	1
River Lemon - Teign tributary below Bovey confluence	1

Each section was named by local names or by reference to a nearby bridge or local landmark. (Maps A, B).

<u>No.</u>	<u>Name</u>	<u>SECTION</u>	<u>River</u>	<u>Grid</u> <u>Ref.</u>	<u>Area</u> <u>sq.m.</u>	<u>Date Surveyed</u>
						<u>1972</u>
1.	Batworthy		North Teign	653871	848	12/7
2.	Walla Brook Bridge		Walla Brook	652872	270	11/7
3.	Leigh Bridge		North Teign	678878	572	15/8
4.	Highbury Bridge		Blackaton Brook	678885	210	13/7
5.	Yeo Farm		South Teign	680860	251	16/8
6.	Leigh Bridge		South Teign	682876	495	16/8
7.	Chagford Leat		Teign	693879	215	7/8

<u>No.</u>	<u>Name</u>	<u>SECTION</u>		<u>Grid</u> <u>Ref.</u>	<u>Area</u> <u>sq.m.</u>	<u>Date Surveyed</u>
		<u>River</u>				<u>1972</u>
8.	Chagford Weir	Teign		701882	796	9/7
9.	Rushford Mill	Teign		708885	540	10/8
10.	Blackpool	Teign		740898	1408	28/7
11.	Bad Rock	Teign		753899	996	31/7
12.	Steps Bridge	Teign		802885	962	1/8
13.	Sowton Weir	Teign		822887	736	2/8
14.	Higher Orchard Pool	Teign		839864	846	3/8
15.	Hyner	Teign		843818	1365	11/8
16.	Chudleigh Bridge	Teign		858788	1350	14/8
17.	New Bridge	Teign		848764	1080	27/7
18.	Stiniel Bridge	Bovey		709851	316	19/7
19.	Wormhill Bridge	Bovey		722849	460	20/7
20.	North Bovey Bridge	Bovey		737838	686	21/7
21.	Foxworthy Bridge	Bovey		758821	390	24/7
22.	Hisley Wood	Bovey		779801	865	26/7
23.	Casely Bridge	Wray		786824	270	23/8
24.	Wilford Bridge	Bovey		799797	690	17/8
25.	Little Bovey Bridge	Bovey		831768	600	18/8
26.	Stover Bridge	Stover Brook		835747	184	22/8
27.	Halfway Bridge	Lemon		801720	336	21/8

A survey section was planned on the River Lemon in Bradley Manor grounds (848708) but was omitted after the river was diverted down the leat to permit access to sewer inspection plates on 17th July 1972. Electro fishing operations at the time yielded the following fish from an area of approximately 1800 sq.m.

Migratory trout	5
Salmon parr	428
Brown trout	1035

#### Sampling Techniques

Parr of the year - fish which hatched in the spring of 1972 - were not assessed quantitatively since their small size made capture and identification

difficult. Salmon and trout parr populations were estimated using the Depletion and Replication method. (de Lury, 1947; Seber & LeCren, 1967). All fish were measured and identified. Since it was not possible to distinguish accurately between young stages of migratory and non-migratory trout, salmonid fish were recorded as either 'salmon' or 'trout'.

### 3. RESULTS

The totals of all salmonid fish caught at each section are given in Tables 1 and 2. (1963 Survey figures in parenthesis).

#### Salmon    Salmo salar

##### (a) Adults

One adult salmon was caught during the survey at Chagford Leat, River Teign, however most of the sections were unlikely lies for adult fish.

##### (b) Parr

Tables 5 and 6 show the size distribution of salmon parr and the estimated populations in each section. Size distributions of salmon parr are shown in Figure 1. Population densities are given in Table 7.

Salmon parr were found in 24 of the 27 sections. None were found in the sections in the Walla Brook (Teign), at Casely Bridge (Wray) and at Halfway Bridge (Lemon). The absence of parr in the Walla Brook section may be accounted for by the lack of penetration of spawning fish above the section. The density of parr showed a general tendency to decrease towards the lower reaches.

#### Estimation of Salmon Parr Population

The mean density of salmon parr in the whole Teign system was 6.7 fish/100 sq.m. and for the Bovey 6.4 fish/100 sq.m.

The total number of salmon parr (1+ and 2+ fish) in the River Teign system was estimated to be 45,578 of which 5,857 was the estimated population of the River Bovey.

Assuming a mortality rate of 50% for 1+ parr to 2+ pre-smolts and a mortality rate of 20% during smolt migration, the number of smolts reaching tidal limits is estimated to be 18,000.

#### Trout    Salmo trutta

##### (a) Adult Migratory Trout

Sections in the River Teign yielded 35 adult migratory trout and the River Bovey 12. (Tables 1 and 2).

##### (b) Brown Trout

Tables 3 and 4 show the size distribution of trout and the calculated populations for each section. The size distributions are represented graphically in Figure 2. Population densities of trout are given in Table 7. Since it was not possible in field conditions to distinguish between parr of migratory and brown trout, the above tables refer to both parr and adult brown and migratory trout.

### Population Estimate

The trout population of the River Teign was estimated to be 48,817 and that of the Bovey 12,604. High density populations were found in the River Bovey between Wormhill Bridge and Foxworthy and the upper reaches of the River Teign.

### 4. DISCUSSION

The salmon parr population of the River Bovey appears to have increased when compared with the 1963 estimate. The mean salmon parr index for this river was 5.1 in 1963 and 6.4 in 1972. The River Teign mean salmon parr index shows a drop from 7.1 in 1963 to 6.9 in 1972. It should be pointed out however that such comparisons are not strictly valid, since the surveys are separated by several years. Furthermore, spawning intensity shows seasonal variation and the upstream limits of adult penetration varies each year. Conclusions drawn from records of redd observations should be cautiously interpreted since field conditions often make observations difficult and local water conditions may obscure redds.

In general, there is a good relationship between spawning intensity and density of parr. The high densities of parr in the middle reaches, e.g. Higher Orchard Pool, may be accounted for by downstream drift of fry and underyearling parr from spawning sites in side streams in these reaches, e.g. Culver Stream and Green Brook.

### ACKNOWLEDGEMENTS

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### REFERENCES

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APPENDIX

Catches of salmon and migratory trout by nets and rods between 1959  
and 1971 - River Teign

Year	Salmon		Migratory Trout	
	Rods	Nets	Rods	Nets
1959	109	1,075	1,172	1,958
1960	189	997	930	1,539
1961	90	616	309	1,512
1962	58	706	460	1,622
1963	134	960	1,493	2,084
1964	90	962	1,639	1,704
1965	130	1,152	1,973	1,847
1966	201	1,303	1,965	2,203
1967	167	1,539	2,226	2,086
1968	108	1,016	2,018	2,481
1969	82	1,484	1,147	1,908
1970	51	1,946	596	922
1971	48	1,052	532	305

Table 1    Totals of all Salmonid Fish Caught at Each Section - River Teign

Name of Section	Trout	Salmon Parr	Sea Trout	Adult Salmon	Totals All Fish
Batworthy	42 (113)	2 (0)	0 (1)	0 (0)	44 (114)
Walla Brook	34 (62)	0 (0)	0 (8)	0 (0)	34 (70)
Leigh Bridge, N.Teign	33 (83)	51 (46)	0 (0)	0 (0)	84 (129)
Blackaton Brook	80 (47)	29 (9)	0 (2)	0 (0)	109 (58)
Yeo Farm	31 (34)	3 (11)	0 (1)	0 (0)	34 (46)
Leigh Bridge, S.Teign	129 (82)	48 (17)	0 (0)	0 (0)	177 (99)
Chagford Leat	50 (71)	5 (9)	0 (2)	0 (1)	55 (83)
Chagford Weir	68 (233)	57 (55)	0 (3)	0 (0)	125 (291)
Rushford Mill	155 (240)	54 (60)	2 (1)	0 (0)	211 (301)
Black Pool	86 (107)	50 (107)	0 (0)	0 (0)	136 (214)
Bad Rock	45 (139)	80 (170)	1 (2)	0 (0)	126 (311)
Steps Bridge	29 (59)	83 (54)	1 (1)	0 (0)	113 (114)
Sowton Weir	62 (76)	55 (175)	2 (0)	0 (0)	119 (251)
Higher Orchard Pool	45 (51)	122 (162)	0 (1)	0 (0)	167 (214)
Hyner	64 (75)	59 (41)	19 (1)	1 (0)	143 (117)
Chudleigh Bridge	83 (52)	36 (26)	1 (3)	0 (0)	120 (81)
New Bridge	57 (44)	40 (31)	9 (9)	0 (0)	106 (84)
Stover Brook	34	2	0	0	36
Halfway Bridge(Lemon)	115	0	0	0	115
Totals	1,242 (1,568)	776 (973)	35 (35)	1 (1)	2,054 (2,577)

**Table 2 Totals of all Salmonid Fish Caught at Each Section - River Bovey**

Name of Section	Trout	Salmon Parr	Sea Trout	Adult Salmon	Totals All Fish
Stiniei Bridge	71	76	0	0	147
Wormhill Bridge	133 (188)	2 (10)	0 (1)	0 (0)	135 (199)
North Bovey Bridge	178 (168)	8 (5)	1 (4)	0 (0)	187 (177)
Foxworthy Bridge	92 (112)	7 (4)	1 (14)	0 (0)	100 (130)
Hisley Wood	94 (118)	59 (58)	0 (20)	0 (2)	153 (198)
Casely Bridge, River Wray	35 (136)	0 (0)	0 (0)	0 (0)	35 (136)
Wilford Bridge	76 (114)	28 (46)	6 (6)	0 (0)	110 (166)
Little Bovey Bridge	64 (86)	20 (67)	4 (4)	0 (0)	88 (157)
Totals	743 (922)	200 (190)	12 (49)	0 (2)	955 (1,126)

Table 3 Size Distribution of Trout - River Teign

Size in cms Section	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	Over 27	Total Sample	1963 Survey	Sample as % of Calcu- lated Total	Calcu- lated Total
Batworthy	2	2	10	2	3	5	5	3	3	1	2	-	-	-	1	2	-	-	-	1 @ 28	42	113	89.4	47
Walla Brook	5	7	2	2	5	2	3	-	2	-	2	-	-	2	-	-	1	-	1		34	62	94.4	36
Leigh Bridge, N.Teign	5	7	5	1	1	1	2	3	2	1	1	2	-	-	-	-	-	1	-	1 @ 35	33	83	86.8	38
Blackaton Brook	16	7	5	4	13	7	3	6	3	4	5	-	2	2	-	-	1	1	-	1 @ 37	80	47	93.0	86
Yeo Farm	-	7	6	4	3	4	4	1	-	-	-	1	1	-	-	-	-	-	-		31	34	96.9	32
Leigh Bridge, S.Teign	5	15	17	16	13	12	16	5	13	1	5	2	3	2	3	-	-	-	-	1 @ 41	129	82	92.8	139
Chagford Leat	1	3	6	4	5	5	6	5	4	4	1	2	1	-	2	-	-	1	-		50	71	96.2	52
Chagford Weir	6	8	12	5	8	9	3	4	4	4	-	2	2	-	-	-	-	-	-	1 @ 31	68	233	91.9	74
Rushford Mill	2	9	15	23	17	20	16	14	9	11	5	6	2	2	-	-	-	1	1	1 @ 29) 1 @ 30)	155	240	91.7	169
Black Pool	15	8	6	12	13	11	1	2	5	4	3	2	2	-	2	-	-	-	-		86	107	80.4	107
Bad Rock	-	5	2	3	6	6	6	6	1	1	3	2	3	1	-	-	-	-	-		45	139	93.8	48
Steps Bridge	1	4	5	-	5	4	3	1	1	1	-	-	3	-	-	-	-	-	-	1 @ 29	29	59	80.6	36
Sowton Weir	-	4	11	9	9	6	9	3	3	3	2	-	2	-	-	1	-	-	-		62	76	91.2	68
Higher Orchard Pool	2	3	3	7	-	6	2	8	2	3	1	2	3	1	-	1	-	-	-	1 @ 30	45	51	83.3	54
Hyner	-	6	4	12	5	5	3	11	6	5	3	-	2	1	-	-	-	1	-		64	75	88.9	72
Chudleigh Bridge	-	1	7	11	8	4	9	12	4	12	4	4	1	1	4	1	-	-	-		83	52	46.1	180
New Bridge	-	3	3	7	4	5	8	7	2	6	4	1	1	1	2	2	-	1	-		57	44	82.6	69
Stover Brook	-	-	-	2	4	6	7	4	1	4	2	-	1	1	-	1	-	1	-		34	-	91.9	37
Halfway Bridge(Lemon)	-	2	7	17	24	15	9	7	8	7	3	6	2	4	1	1	-	1	-	1 @ 33	115	-	99.1	116
Totals	60	101	126	141	146	133	115	102	73	72	46	32	31	18	15	9	2	8	2	10 over 27	1,242	1,568	85.1	1,460



Table 4    Size Distribution of Trout - River Bovey

Size in cms Section	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	Over 27	Total Sample	1963 Survey	Sample as % of Calcu- lated Total	Calcu- lated Total
Stiniel Bridge	11	9	5	9	10	5	7	3	2	4	1	1	-	1	1	-	1	-	-	1 @ 34	71	-	94.7	75
Wormhill Bridge	9	23	23	9	17	13	12	2	4	-	6	3	6	-	2	2	-	2	-		133	188	90.5	147
North Bovey Bridge	5	8	33	20	16	25	12	11	5	6	9	2	6	6	4	2	3	2	2	1 @ 32	178	168	80.9	220
Foxworthy Bridge	7	14	19	8	9	8	7	6	3	4	3	-	1	1	-	1	-	-	-	1 @ 28	92	112	78.0	118
Hisley Wood	14	19	10	8	7	13	8	6	2	2	1	1	1	1	-	1	-	-	-		94	118	94.9	99
Casely Bridge, River Wray	-	-	-	-	1	8	3	6	8	4	-	2	2	1	-	-	-	-	-		35	136	100.0	35
Wilford Bridge	1	5	12	8	12	5	13	5	4	1	4	2	-	2	1	-	-	-	-	1 @ 39	76	114	53.5	142
Little Bovey Bridge	-	-	-	2	8	15	12	7	5	6	2	2	-	-	1	2	-	1	-	1 @ 29	64	86	94.1	68
Totals	47	78	102	64	80	92	74	46	33	27	26	13	16	12	9	8	4	5	2	5 over 27	743	922	82.2	904

Table 5    Size Distribution of Salmon Parr - River Teign

Size in cms Section	9	10	11	12	13	14	15	Total Sample	1963 Survey	Sample as % of Calculated Total	Calculated Total
Batworthy	-	-	-	1	1	-	-	2	-	100.0	2
Walla Brook	-	-	-	-	-	-	-	0	0	0	0
Leigh Bridge, N.Teign	11	22	10	5	-	3	-	51	46	77.3	66
Blackaton Brook	7	8	4	7	2	1	-	29	9	90.6	32
Yeo Farm	-	-	1	1	-	-	1	3	11	100.0	3
Leigh Bridge, S.Teign	8	11	15	5	4	3	2	48	17	87.3	55
Chagford Leat	-	-	1	2	2	-	-	5	9	100.0	5
Chagford Weir	5	22	16	9	4	1	-	57	55	87.7	65
Rushford Mill	2	15	14	11	9	2	1	54	60	90.0	60
Black Pool	23	13	2	6	3	3	-	50	107	94.3	53
Bad Rock	12	17	29	12	6	2	2	80	170	89.9	89
Steps Bridge	2	9	35	32	4	1	-	83	54	92.2	90
Sowton Weir	5	14	26	8	2	-	-	55	175	90.2	61
Higher Orchard Pool	14	42	41	17	6	1	1	122	162	62.2	196
Hyner	13	17	15	10	3	1	-	59	41	53.6	110
Chudleigh Bridge	1	7	16	8	4	-	-	36	26	69.0	Not suitable
New Bridge	6	16	11	6	1	-	-	40	31	-	58
Stover Brook	-	-	-	-	1	1	-	2	-	100.0	2
Halfway Bridge(Lemon)	-	-	-	-	-	-	-	0	-	0	0
Totals	109	213	236	140	52	19	7	776	973	81.9	947

Table 6    Size Distribution of Salmon Parr - River Bovey

Size in cms Section	9	10	11	12	13	14	15	16	Total Sample	1963 Survey	Sample as % of Calculated Total	Calculated Total
Stiniet Bridge	27	35	14	-	-	-	-	-	76	-	78.4	97
Wormhill Bridge	-	-	-	-	-	-	2	-	2	10	100.0	2
North Bovey Bridge	-	-	2	3	1	-	1	1	8	5	100.0	8
Foxworthy Bridge	-	-	1	1	2	1	1	1	7	4	70.0	10
Hisley Wood	5	30	14	3	2	3	1	1	59	58	89.2	65
Casely Bridge, River Wray	-	-	-	-	-	-	-	-	0	0	0	0
Wilford Bridge	2	10	5	6	3	-	1	1	28	46	80.0	35
Little Bovey Bridge	-	-	4	9	7	-	-	-	20	67	90.9	22
Totals	34	75	40	22	15	4	6	4	200	190	83.7	239

Table 7    Population Densities of Salmon Parr and Trout

Section	Area sq.m.	Population Estimate		Population Density, fish/100 sq.m.	
		Salmon	Trout	Salmon	Trout
1. Batworthy	848	2	47	0.2	5.5 *
2. Walla Brook	270	0	36	0	13.3
3. Leigh Bridge, N.Teign	572	66	38	11.6	6.7
4. Blackaton Brook	210	32	86	15.3	41.0
5. Yeo Farm	251	3	32	1.2	12.8 *
6. Leigh Bridge, S.Teign	495	55	139	11.0	27.8
7. Chagford Leat	215	5	52	2.3	23.6
8. Chagford Weir	796	65	74	8.1	9.3
9. Rushford Mill	540	60	169	11.1	31.3
10. Black Pool	1,408	53	107	3.8	7.6
11. Bad Rock	996	89	48	8.9	4.8
12. Steps Bridge	962	90	36	9.4	3.7 -
13. Sowton Weir	736	61	68	8.2	9.2
14. Higher Orchard Pool	846	196	54	23.0	6.3
15. Hyner	1,365	110	72	8.0	5.3
16. Chudleigh Bridge	1,350	36	180	2.7	13.3
17. New Bridge	1,080	58	69	5.4	6.4
18. Stiniel Bridge	316	97	75	30.3	23.4
19. Wormhill Bridge	460	2	147	0.4	31.9
20. North Bovey Bridge	686	8	220	1.2	31.9
21. Foxworthy Bridge	390	10	118	2.6	30.3
22. Hisley Wood	865	65	99	7.5	11.4
23. Casely Bridge	270	0	35	0	13.0 #
24. Wilford Bridge	690	35	142	5.1	20.6
25. Little Bovey Bridge	600	22	68	3.7	11.3
26. Stover Bridge	184	2	37	1.1	20.5
27. Halfway Bridge	336	0	116	0	34.1

Mean 6.7    Mean 16.9

FIGURE 1

Salmon Parr - Size Distribution  
Rivers Teign & Bovey Combined

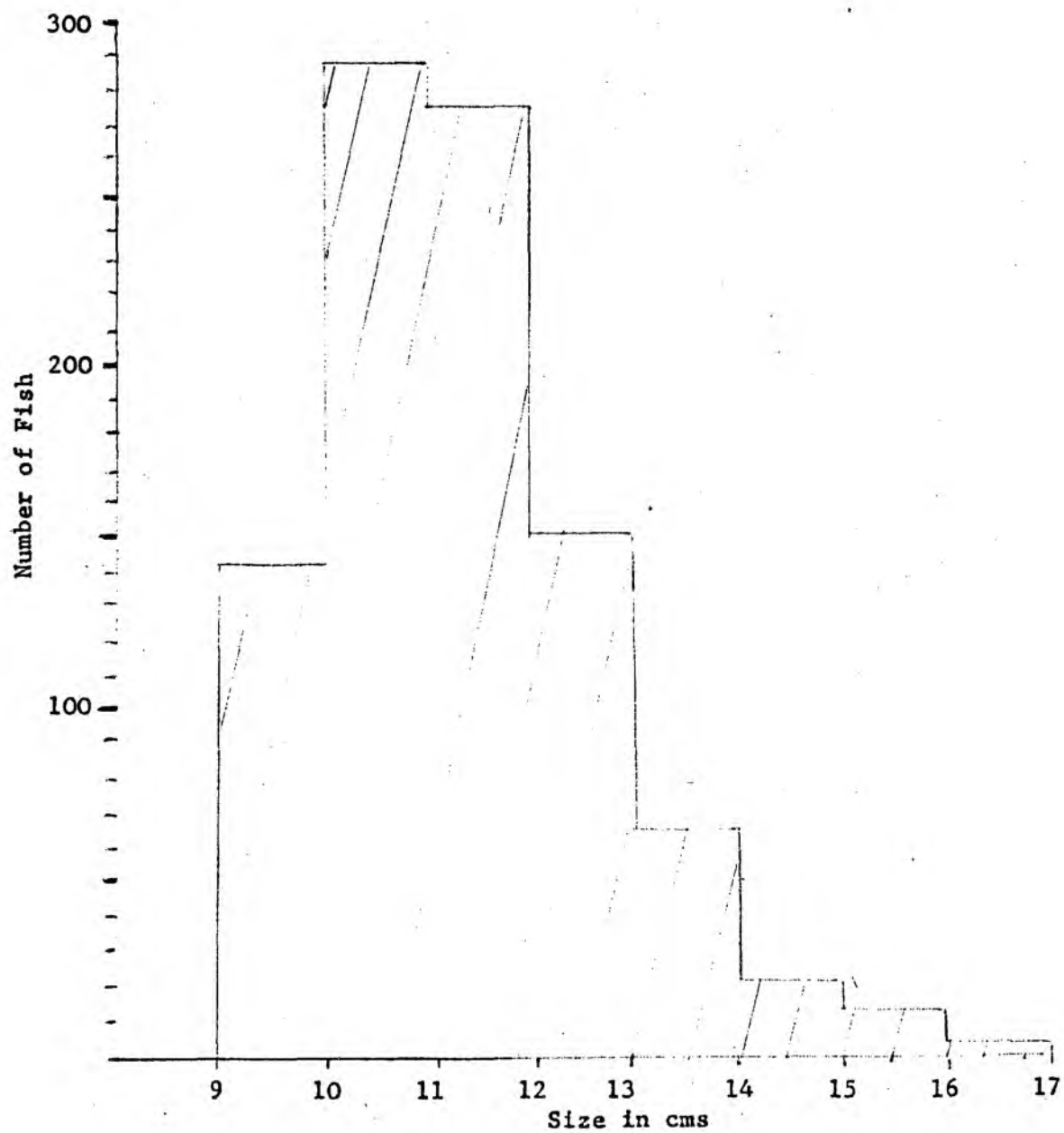
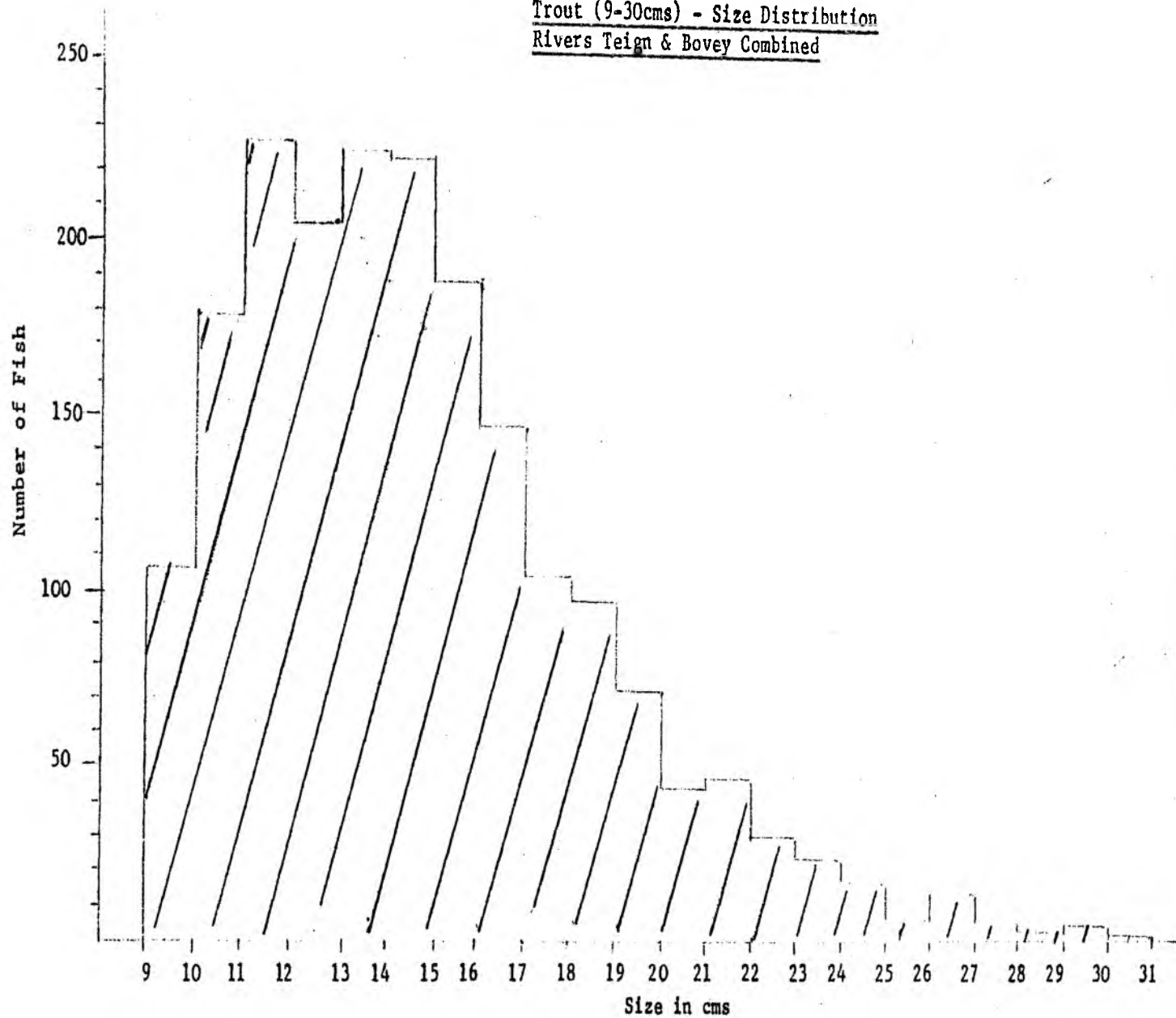
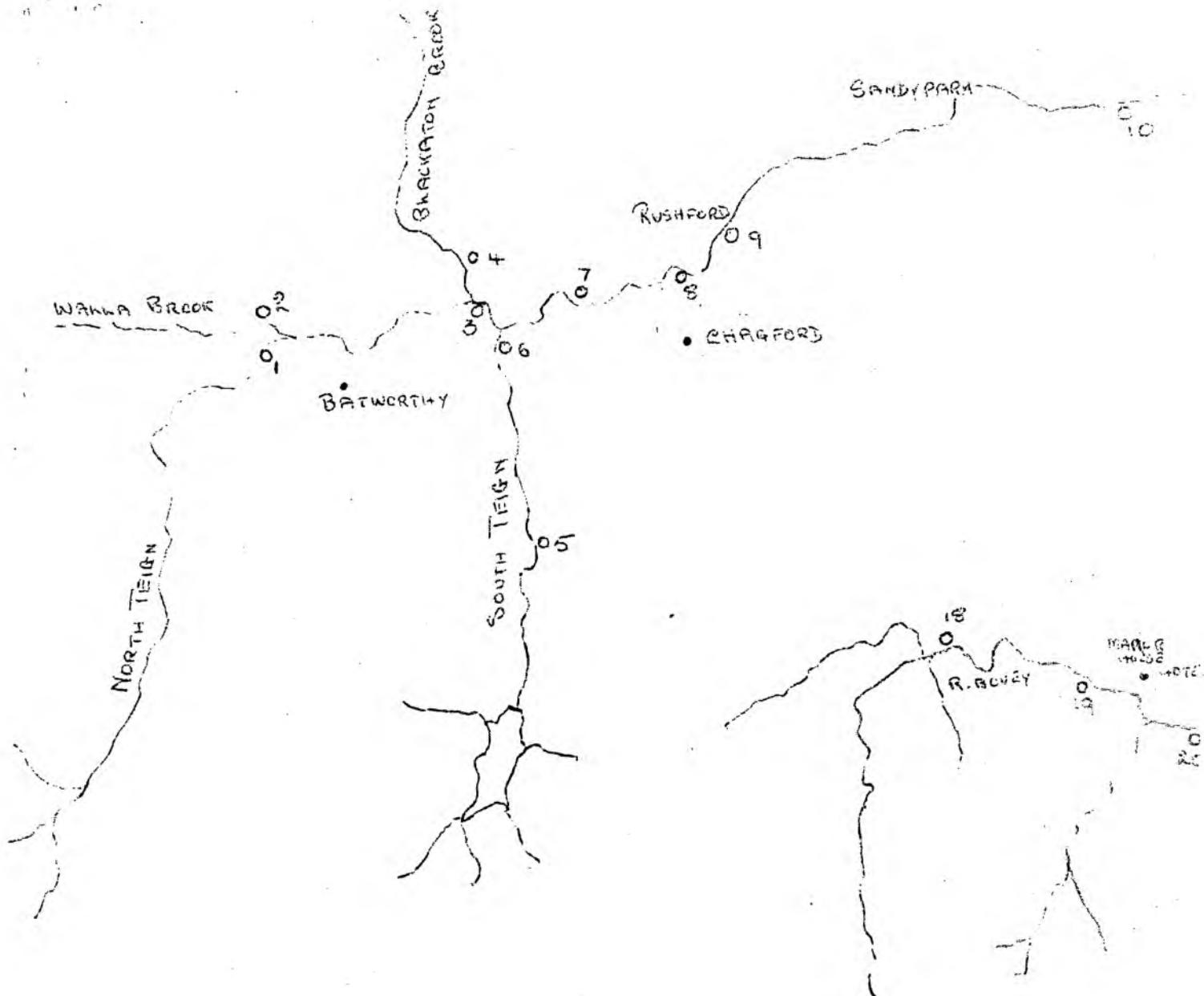


FIGURE 2

Trout (9-30cms) - Size Distribution  
Rivers Teign & Bovey Combined

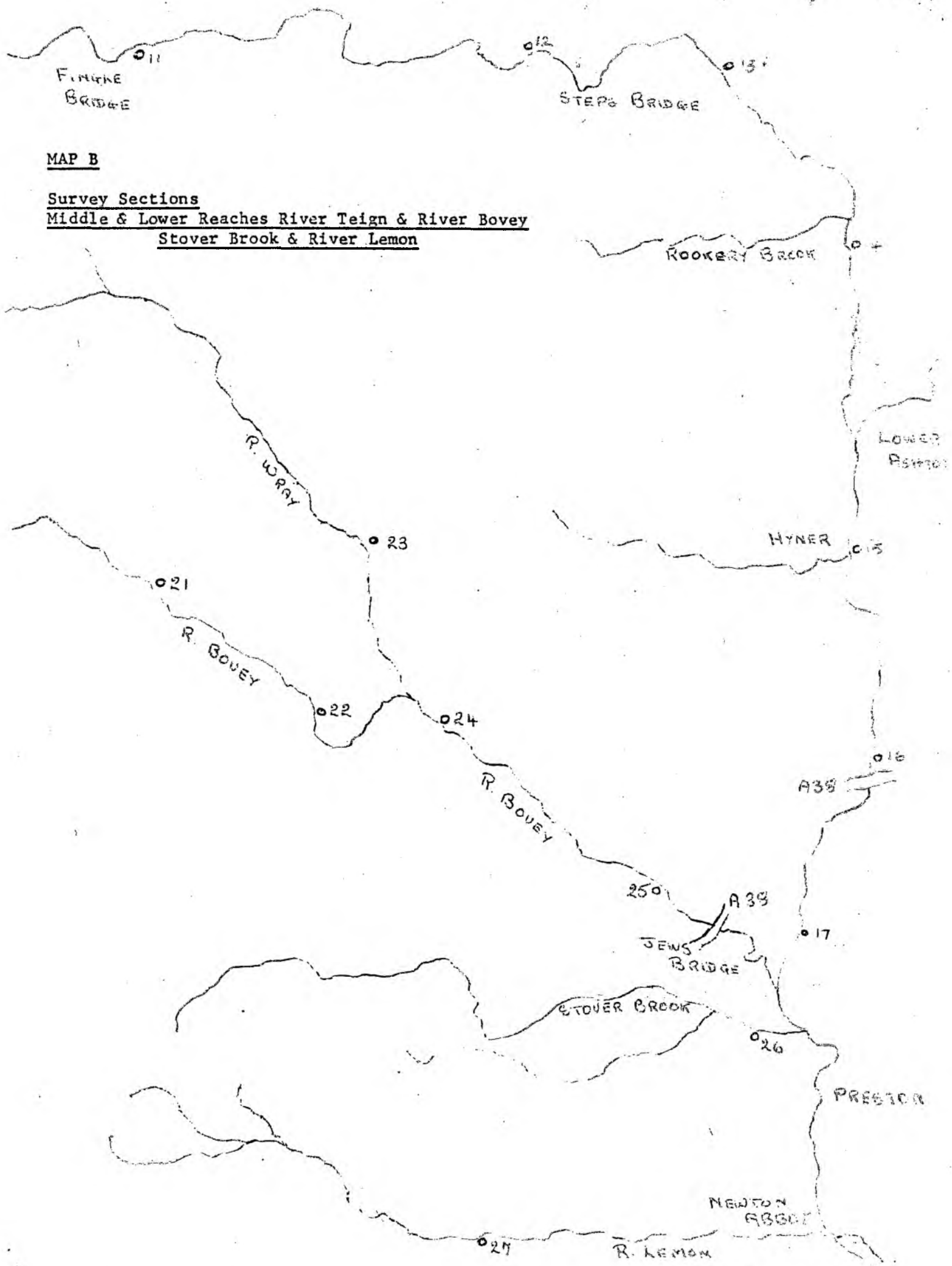




# MAP A

## Survey Sections

Upper Reaches River Teign & River Bovey



MAP B

Survey Sections

Middle & Lower Reaches River Teign & River Bovey

Stover Brook & River Lemon